

FEB 2005

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
2 December 2004 (02.12.2004)

PCT

(10) International Publication Number
WO 2004/105154 A2

- (51) International Patent Classification⁷: **H01M** (74) Agents: LAURENTANO, Anthony, A. et al.; Lahive & Cockfield LLP, 28 State Street, Boston, MA 02109 (US).
- (21) International Application Number: PCT/US2003/025517 (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 13 August 2003 (13.08.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/403,218 13 August 2002 (13.08.2002) US (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): ZTEK CORPORATION [US/US]; 300 West Cummings Park, Woburn, MA 01801 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): RAMIREZ, Alfred [US/US]; c/o Intertec Southwest, Inc., 4201 South Santa Rita Ave, Tucson, AR 85714 (US). TSAY, David [US/US]; c/o Intertec Southwest, Inc., 4201 South Santa Rita Ave., Tucson, AZ 85714 (US). HSU, Michael, S. [US/US]; Ztek Corporation, P.O. Box 3070, Woburn, MA 01888-1970 (US).
- Published:
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: METHOD OF FORMING FREESTANDING THIN CHROMIUM COMPONENTS FOR AN ELECTROCHEMICAL CONVERTER

(57) Abstract: A method of fabricating a high density thin component which can be used in an electrochemical converter comprises tape casting a material to form a tape followed by hot pressing of the tape to provide additional densification of the material. A plurality of tapes may be laminated together prior to hot pressing to provide a thicker structure or a composite structure. The materials used to produce the component may include silicon carbide, SiC, high chromium alloys, chromium iron alloys, (Cr-5wt%Fe-1wt%Y₂O₃) and chromium magnesium alloys (Cr-5wt%Ni-1wt%MgO). The fabrication method produces a high density component, including the application in an electrochemical converter, having a thickness of less than about 0.03 inches.

WO 2004/105154 A2